W03439

0055632

SEVERN TRENT SERVICES

STL St. Louis
13715 Rider Trail North
Earth City, MO 63045

Tel 314 298 8566
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ANALYTICAL REPORT

PROJECT NO. JA JONES VER

B01-074

Lot #: F1D260193
SDG #: W03439

Joan Kessner

Bechtel Hanford, Inc.
3190 George Washington Way
Richland, WA 99352

SEVERN TRENT LABORATORIES, INC.

MARTI WARD
Project Manager

May 17, 2001

SEVERN TRENT SERVICES

STL St. Louis

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

May 16, 2001

Attention: Joan Kessner

Project Number	:	41769
SAF	:	B01-074
SDG	:	W03439
Number of Samples	:	two
Sample Matrix	:	soil
Data Deliverable	:	Summary
Date SDG Closed	:	April 25, 2001

II. Introduction

On April 26, two (2) "soil" samples were received by STL--St. Louis for chemical analysis. The samples were received at the St. Louis lab at a temperature of 2 degrees C. See the COC and CUR forms for details of sample condition and temperature. See the attached Sample Summary form for the Lab ID's and corresponding Client Ids.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. This report is not complete without the Case Narrative. Results are reported "as received"; i.e. wet weight, unless otherwise noted on the data sheets.

Analyses requested: Metals – 6010 Ba, Cd, Cr, + add on Pb

Deviation from Request: The metals were done using method 6010B in place of 6010A.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

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V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Metals: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The Cadmium MS/MSD recoveries were below the criteria at 70%. The data was flagged with an "N" qualifier. LCS recovery met the QC limits.

I certify that this Summary is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Marti Ward

Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY

F1D260193

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ECEJC	001	B11RN7	04/19/01	12:40
ECEJQ	002	B11RN8	04/19/01	13:40

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F1D260193

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/26/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:56:51
STL St. Louis User Id.: CLARKEJ

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 41769
PROJECT MANAGER: MARTI WARD LAB ID: P-1D260193-001
PROJECT #: JA JONES VER WORK ORDER: ECEJC
REPORT TO: Joan Kessner RECEIVING DATE: 4/26/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/19/01
SITE: B01-074 ANALYTICAL DUE DATE: 5/14/01N
AMOUNT REC'D: 2X60G REPORT DUE DATE: 6/09/01
STORAGE LOC: R6 PRIORITY: 18
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 12:40
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B11RN7
QC PACKAGE: Special Report - see checklist SDG# : W03439
SAMPLE COMMENTS:

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Moisture, Percent (160.3)	06	4/26/01	0/00/00	7/27/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) ECEJC-1-AA Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B Trace)	06	4/26/01	0/00/00	10/16/01
METALS, TOTAL - Soils				
MT6010_S BA,CD,CR,PB				
(A-46-QM-01) ECEJC Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/26/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:56:51
STL St. Louis User Id.: CLARKEJ

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 41769
PROJECT MANAGER: MARTI WARD LAB ID: F-1D260193-002
PROJECT #: JA JONES VER WORK ORDER: ECEJQ
REPORT TO: Joan Kessner RECEIVING DATE: 4/26/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/19/01
SITE: B01-074 ANALYTICAL DUE DATE: 5/14/01N
AMOUNT REC'D: 2X60G REPORT DUE DATE: 6/09/01
STORAGE LOC: R6 PRIORITY: 18
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 13:40
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B11RN8
QC PACKAGE: Special Report - see checklist SDG# : W03439
SAMPLE COMMENTS:

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Moisture, Percent (160.3)	06	4/26/01	0/00/00	7/27/01
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(A-88-WM-01) ECEJQ-1-AA Protocol: A QC Program: STANDARD TEST SET				
Inductively Coupled Plasma (6010B Trace)	06	4/26/01	0/00/00	10/16/01
METALS, TOTAL - Soils				
MT6010_S BA,CD,CR,PB				
(A-46-QM-01) ECEJQ Protocol: A QC Program: STANDARD TEST SET				

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/26/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:56:51
STL St. Louis User Id.: CLARKEJ

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 41769
PROJECT MANAGER: MARTI WARD LAB ID: F-1D260193-002-D
PROJECT #: JA JONES VER WORK ORDER: ECEJQ MSD
REPORT TO: Joan Kessner RECEIVING DATE: 4/26/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/19/01
SITE: B01-074 ANALYTICAL DUE DATE: 5/14/01N
AMOUNT REC'D: 2X60G REPORT DUE DATE: 6/09/01
STORAGE LOC: R6 PRIORITY: 18
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 13:40
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B11RN8
QC PACKAGE: Special Report - see checklist SDG# : W03439
SAMPLE COMMENTS:

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	4/26/01	0/00/00	10/16/01

METALS, TOTAL - Soils
MT6010_S BA,CD,CR,PB
(A-46-QM-01) ECEJQ Protocol: A QC Program: STANDARD TEST SET

PSL20300 SEVERN TRENT LABORATORIES, INC Run Date: 4/26/01
Page 1 CLIENT ANALYSIS SUMMARY Time: 10:56:51
STL St. Louis User Id.: CLARKEJ

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 41769
PROJECT MANAGER: MARTI WARD LAB ID: F-1D260193-002-S
PROJECT #: JA JONES VER WORK ORDER: ECEJQ MS
REPORT TO: Joan Kessner RECEIVING DATE: 4/26/01
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 4/19/01
SITE: B01-074 ANALYTICAL DUE DATE: 5/14/01N
AMOUNT REC"D: 2X60G REPORT DUE DATE: 6/09/01
STORAGE LOC: R6 PRIORITY: 18
LOT COMMENTS: Metals: CRDL standard required +/-25% SAMPLING TIME: 13:40
MATRIX: SOLID RECEIVING TIME: 9:00
SAMPLE ID: B11RN8
QC PACKAGE: Special Report - see checklist SDG# : W03439
SAMPLE COMMENTS:

Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Inductively Coupled Plasma (6010B Trace)	06	4/26/01	0/00/00	10/16/01

METALS, TOTAL - Soils
MT6010_S BA,CD,CR,PB
(A-46-QM-01) ECEJQ Protocol: A QC Program: STANDARD TEST SET

LOT # F1D260193

W03439

STL St. Louis

cur 2783 2°

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B01-074-2	Page 1 of 1
Collector Thomas, GS | R. Fahlberg	Company Contact Lerch, JA	Telephone No. 373-5904	Project Coordinator TRENT, SJ	Price Code 8L / Data Turnaround 21 Days
Project Designation JA Jones Verification Sampling - Soil	Sampling Location JA Jones Excavation		SAF No. B01-074	Air Quality ☐
Ice Chest No. QES-KNOX	Field Logbook No. RG EL-~~1518~~ 1517-2 4-19-01	COA RJONES2E00	Method of Shipment ~~Government Vehicle~~ Fed Ex RG 4.19.01	
Shipped To Severn Trent Incorporated	Offsite Property No. A010190		Bill of Lading/Air Bill No. 4235 7954-3955	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

W03439

SAMPLE ANALYSIS

Preservation	Cool 4C	None		
Type of Container	aG	aG		
No. of Container(s)	1	1		
Volume	60mL	60mL		
Sample Analysis	See item (1) in Special Instructions.	Activity Scan		T/RTO

Sample No.	Matrix *	Sample Date	Sample Time	See item (1)	Activity Scan			
B11RN7	SOIL	4/19/01	1240	✓	✓	2x 60 g	all 100% full.	B11RL9
B11RN8	SOIL	4/19/01	1340	✓	✓	↓		B11RM3

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Fahlberg | R. Fahlberg	4-19-01 1500	Ref. 2C	4-19-01 1500
Ref. 2C 3728	4/25/01 0900	R.T. | R. Thorer	4/25/01 0900
R.T. | R. Thorer	4/25/01 0900	FED EX	
FED EX		[illegible] STL	04 26 01 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Barium, Cadmium, Chromium}; ICP Metals - 6010A (Add-on) {Lead}

Samples stored in Ref.# 2C at the 3728 Shipping Facility on 4/19/01. Collector not available to relinquish samples on 4/25/01 for shipment. RT 4/25/01

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

BHI-EE-011 (10/99)

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9226 Sample Date & Time 4/19/01 1240

Project ID: JAJONES SAF Number: B01-074 Date Analyzed 4/23/01 2:42:4

Sample ID: B11RL9

cc. Joel

TIE TO

~~B11RN4~~

~~B11RP4~~

B11RN7

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40		1.8E+01	+/-	5.9E+00	3.4E+00
Co-60	<	3.3E-01			3.3E-01
Cs-137	<	3.7E-01			3.7E-01
Eu-152	<	9.1E-01			9.1E-01
Eu-154	<	9.9E-01			9.9E-01
Eu-155	<	7.4E-01			7.4E-01
Tl-208		1.3E+00	+/-	7.0E-01	6.6E-01
Pb-212	<	3.7E-01			3.7E-01
Bi-214	<	2.4E+00			2.4E+00
Ra-226	<	5.3E+00			5.3E+00
Ac-228	<	1.3E+00			1.3E+00
Th-234	<	3.5E+00			3.5E+00
Pa-234	<	5.9E-01			5.9E-01
U-235	<	1.8E+00			1.8E+00
Am-241	<	4.9E-01			4.9E-01

Total GEA (pCi/g)	1.9E+01	+/-	6.6E+00

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	9.9E-01	+/-	4.2E-01	4.6E-01	
Gross Beta	1.8E+01	+/-	1.4E+00		9.6E+00

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorption
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst C.L. Hastings 4/25/01

Report Printed: Wednesday, April 25, 2001

Report To	Fax
Jeff Lerch	373-5373
SJ Trent	372-0292
Joan Kessner	372-9487

ERC Radiological Counting Facility Analysis Report

RCF Number RCF9230 **Sample Date & Time** 4/19/01 1340

Project ID: JA JONES **SAF Number:** B01-074 **Date Analyzed** 4/24/01 12:18:

Sample ID: B11RM3

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40		1.5E+01	+/-	4.7E+00	2.5E+00
Co-60	<	3.1E-01			3.1E-01
Cs-137	<	2.4E-01			2.4E-01
Eu-152	<	7.9E-01			7.9E-01
Eu-154	<	9.4E-01			9.4E-01
Eu-155	<	6.0E-01			6.0E-01
Tl-208	<	7.7E-01			7.7E-01
Pb-212		6.8E-01	+/-	3.8E-01	4.3E-01
Bi-214	<	1.8E+00			1.8E+00
Pb-214		7.7E-01	+/-	3.0E-01	3.9E-01
Ra-226	<	3.7E+00			3.7E+00
Ac-228	<	9.9E-01			9.9E-01
Th-234	<	2.7E+00			2.7E+00
Pa-234	<	4.6E-01			4.6E-01
U-235	<	1.1E+00			1.1E+00
Am-241	<	3.3E-01			3.3E-01

TIETO
B11RM3

Total GEA (pCi/g)	1.6E+01	+/-	5.3E+00

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	5.7E-01	+/-	3.7E-01	3.0E-01	
Gross Beta	1.5E+01	+/-	1.4E+00		8.0E+00

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 4/25/01

Report Printed: Wednesday, April 25, 2001

Report To	Fax
Jeff Lerch	373-5373
SJ Thiel	372-9292
Joan Kessner	372-9487

STL

SEVERN TRENT SERVICES

Lot No.: F1D260193
W03439

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford
Date: 04.26.01 Time: 0950
Quote No: 41769
Initiated by: SV
Shipper/No: FedX 4235 7964 3965
RFA/COC Numbers: BOI-074-2

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Sample volume insufficient for analysis
11. ☐ Other (explain below)

☑ **No variances were noted during sample receipt.**

☐ **Cooler Temperature Upon Receipt in °C:** 20

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: _____

Corrective Action:

- ☐ Client's Name: _____ Informed verbally on: _____ By: _____
- ☐ Client's Name: _____ Informed in writing on: _____ By: _____
- ☐ Sample(s) processed "as is". _____
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: (or designate) [signature] Date: 04.26.01

Project Management Review: [signature] Date: 4.26.01

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY HIS/HER INITIALS AND THE DATE NEXT TO THAT ITEM

METALS

BECHTEL HANFORD, INC.

Client Sample ID: B11RN7

TOTAL Metals

Lot-Sample #...: F1D260193-001 Matrix.....: SOLID
Date Sampled...: 04/19/01 Date Received..: 04/26/01
% Moisture.....: 0.0

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1129176						
Barium	76.1	20.0	mg/kg	SW846 6010B	05/09-05/16/01	ECEJC1AC
		Dilution Factor: 1		MDL.....: 0.090		
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/09-05/16/01	ECEJC1AD
		Dilution Factor: 1		MDL.....: 0.020		
Chromium	9.3	1.0	mg/kg	SW846 6010B	05/09-05/16/01	ECEJC1AE
		Dilution Factor: 1		MDL.....: 0.090		
Lead	4.2	0.30	mg/kg	SW846 6010B	05/09-05/16/01	ECEJC1AF
		Dilution Factor: 1		MDL.....: 0.15		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1D260193 **Matrix.....:** SOLID
Date Sampled...: 04/19/01 **Date Received..:** 04/26/01

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT		UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1D260193-002 **Prep Batch #...:** 1129176										
Barium										
	70.0	200	264		mg/kg	97		SW846 6010B	05/09-05/16/01	ECEJQ1AG
	70.0	200	264		mg/kg	97	0.17	SW846 6010B	05/09-05/16/01	ECEJQ1AH
			Dilution Factor: 1							
Cadmium										
	ND	5.00	3.50	N	mg/kg	70		SW846 6010B	05/09-05/16/01	ECEJQ1AJ
	ND	5.00	3.48	N	mg/kg	70	0.57	SW846 6010B	05/09-05/16/01	ECEJQ1AK
			Dilution Factor: 1							
Chromium										
	8.5	20.0	26.6		mg/kg	90		SW846 6010B	05/09-05/16/01	ECEJQ1AL
	8.5	20.0	26.7		mg/kg	91	0.33	SW846 6010B	05/09-05/16/01	ECEJQ1AM
			Dilution Factor: 1							
Lead										
	3.1	50.0	47.4		mg/kg	89		SW846 6010B	05/09-05/16/01	ECEJQ1AN
	3.1	50.0	48.3		mg/kg	90	1.8	SW846 6010B	05/09-05/16/01	ECEJQ1AP
			Dilution Factor: 1							

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

BECHTEL HANFORD, INC.

Client Sample ID: B11RN8

TOTAL Metals

Lot-Sample #...: F1D260193-002 Matrix.....: SOLID
Date Sampled...: 04/19/01 Date Received..: 04/26/01
% Moisture.....: 0.0

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1129176						
Barium	**70.0**	**20.0**	**mg/kg**	**SW846 6010B**	**05/09-05/16/01**	**ECEJQ1AC**
		Dilution Factor: 1		MDL.....: 0.090		
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/09-05/16/01	ECEJQ1AD
		Dilution Factor: 1		MDL.....: 0.020		
Chromium	**8.5**	**1.0**	**mg/kg**	**SW846 6010B**	**05/09-05/16/01**	**ECEJQ1AE**
		Dilution Factor: 1		MDL.....: 0.090		
Lead	**3.1**	**0.30**	**mg/kg**	**SW846 6010B**	**05/09-05/16/01**	**ECEJQ1AF**
		Dilution Factor: 1		MDL.....: 0.15		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1D260193 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1E090000-176 **Prep Batch #...:** 1129176						
Barium	ND	20.0	mg/kg	SW846 6010B	05/09-05/15/01	EC2811A5
		Dilution Factor: 1				
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/09-05/15/01	EC2811A6
		Dilution Factor: 1				
Chromium	ND	1.0	mg/kg	SW846 6010B	05/09-05/15/01	EC2811A7
		Dilution Factor: 1				
Lead	ND	0.30	mg/kg	SW846 6010B	05/09-05/15/01	EC2811AC
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1D260193 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F1E090000-176 **Prep Batch #...:** 1129176							
Lead	138	140	mg/kg	101	SW846 6010B	05/09-05/15/01	EC2811CA
			Dilution Factor: 1				
Barium	124	144	mg/kg	116	SW846 6010B	05/09-05/15/01	EC2811C4
			Dilution Factor: 1				
Cadmium	118	127	mg/kg	107	SW846 6010B	05/09-05/15/01	EC2811C5
			Dilution Factor: 1				
Chromium	89.3	90.0	mg/kg	101	SW846 6010B	05/09-05/15/01	EC2811C6
			Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.